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PERSONNEL RELATIONS

by

James Kneeland Richardson

A

T H E S I S

submitted to the faculty of the

SCHOOL OF MINES AND METALLURGY OF THE UNIVERSITY OF MISSOURI

In partial fulfillment of the work required for the

D E G R E E O F

ENGINEER OF MINES

Rolla, Mo.

1935

Approved by Professor of Mining

PERSONNEL RELATIONS

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FOREWORD

The author has not attempted to portray an idealistic scheme in this paper. It is the result of personal experience among working men, listening to their complaints and grievances; and suddenly discovering that all any man asked was the right to be independent during his declining years; the right of free speech; the right to earn his living by working under good conditions; and the right to receive in compensation for his labor a fair and equitable division of profits on goods resulting from his work.

All the points taken up in this paper are not common to one industry, but, according to the author's personal opinion, the "best of the lot."

It is realized that the rapidly changing concept of labor's status may make this paper worthwhile today, but worthless tomorrow, consequently, the author has tried to maintain a "common sense" attitude toward labor.

J. K. Richardson

Carlsbad, N. Mex.

April 1, 1935

THE INDUSTRIAL ORGANIZATION

Only within recent years has man-power been considered other than a distinct commodity. Whether or not it is a commodity, and should be considered as such, is a matter of much conjecture. Men's compensation was governed by the same economic laws that controlled the prices of food, clothing and manufactured articles, namely, the laws of supply and demand.

Recently industry has realized that man-power is the backbone of our entire economic and industrial plan. Intelligent man-power must be effectively combined with machine power to produce capital goods.

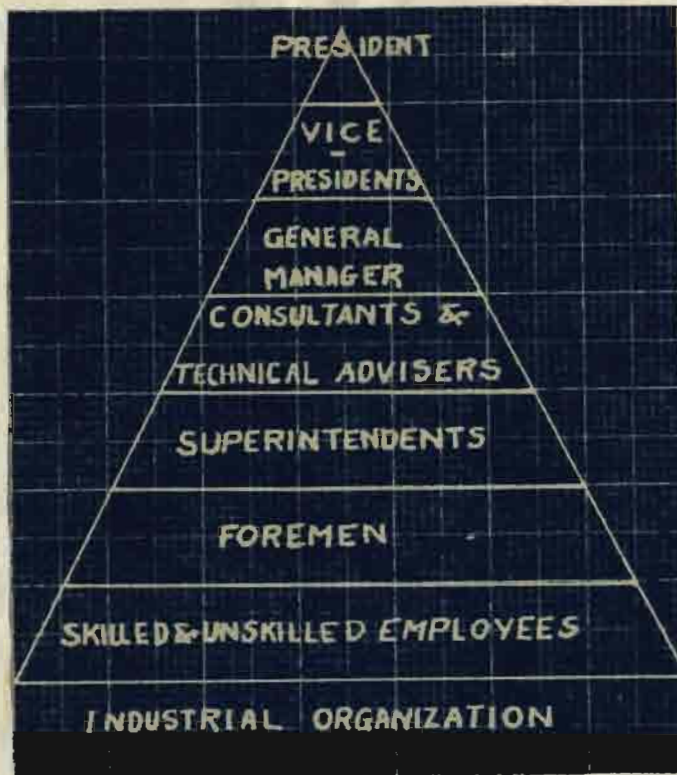
In any industrial set-up, the first thing necessary is a workable organization plan. No single man in the corporate industry of today, can do all the necessary work. Duties must be delegated to hundreds of individuals and all their efforts must be co-ordinated for effective present and future service.

Perhaps the best way of illustrating the last point, is to point out the latest form of modern business. It is the ever growing corporate form of organization, which has literally displaced the old "owner-manager" type of industry. Through stock ownership, the owners of a

business are numbered by the thousands. It is obvious that this large group cannot run the business themselves, they, therefore, select a certain group of people in whom they have confidence as directors or trustees. These directors are chosen for their good judgment and trustworthiness. Even these individuals realize that there must be a directing head to co-ordinate their efforts. They, therefore, select an individual who is called the president.

The president is the apex of the hypothetical pyramid of business organization. A single individual at the top, while the broad mass of man-power, used in producing capital goods, forms the base of the pyramid. Between the apex and the base are the various supervisory and technical men, such as, vice presidents, general managers, managers, superintendents and foremen. Each and every one of these so called "upper bracket men" are employees of the organization just as surely as those at the bottom.

DEVELOPMENT OF EMPLOYEE MORALE



Looking at this figure, it is at once apparent that the ideal situation is where the worker in the base can visualize this pyramid and picture himself going up through these brackets until he finally reaches the apex! That is the general plan in which organizations try to work out their future supervisory needs. Leaders in upper brackets realize that a man who starts at the bottom has a knowledge of the business through experience that cannot be attained in any other way. However, we must realize that an education helps the man starting at the bottom, for he

is better prepared, basically, to understand processes, and consequently, moves much more rapidly. Experience supplemented by education or vice versa is an invaluable asset to any man.

The advancement of employees setting out from the bottom, step by step, is not as idealistic as it seems. There are always men who are ambitious enough to improve themselves through study so that they will advance more steadily. However, very few men will ever develop their abilities so thoroughly as to achieve or be worthy of the position of president. It is hard to determine just how far each individual will go, but it should be the goal of every executive to instil in each employee a desire to develop himself to the limit of his capabilities.

A certain few of the laborers will become foremen, and there they will stop; a few of the foremen will develop into capable superintendents, and there they will leave a few who lack ambition, or are satisfied with that status. Others will continue to progress, a few stopping off at each bracket until it is narrowed down to a single man--the president.

This narrowing down process sometimes makes it necessary for the organization to take in "outsiders;" men who have been trained in other organizations and have definite

leadership possibilities. Fortunate is the industry that can supply all its executives from its own ranks, but in most cases this is not possible. The number of "outsiders" taken in should be small so as not to discourage the men at the bottom. Individuals at the base of our pyramid must always feel that there is room for them at the top if they can develop themselves sufficiently.

In order to stimulate development, no executive should forget for a moment that the motivating influences in each employee are desire for security and desire to get ahead.

In stimulating the employee morale through his desire for security, the organization should make every effort to assure, as far as possible, the independence of an employee in old age; the independence of the employee's dependents in case of death or sickness; a safe working place; and medical attention in case of illness.

The desire to advance in knowledge, skill and compensation, and to have recognition of these advances by fellow workers is the man's definition of the desire to get ahead.

If the normal corporate industry is to succeed, it must provide for these two motives in order to stimulate loyalty, ambition and efficiency among its employees. Without these three things, no industry can hope to com-

pete with other industries.

Probably the greatest single factor in promoting good relations is confidence; confidence in the leaders and the company they represent; and confidence of the leaders in the men they employ. Confidence can be achieved by friendliness and "square dealing" on the part of both the employer and the employee.

For an employer to establish a reputation for friendliness and square dealing sounds relatively simple, however, it may be a long drawn out process. Old employees must feel that there is no company like their own, and the company must feel that there is nothing in their policies which is not "open and above board." New employees must feel that the future is bright, and that they will progress if they are loyal and efficient. The corporate industry must "feel its way" and avoid anything that leans toward paternalism. Men or women resent paternalism of any sort. The human being likes to feel that he has worked out his own problems, and that he is distinctly responsible for the solutions obtained.

Friendliness should never be a burden to anyone. There are natural human instincts toward alliances for protection and welfare. These alliances are particularly valuable to any industry. The laborer should, at all

times, feel that he has access to the time of any of the upper bracket men. To be a genuine leader, a supervisor may need to be a "father confessor" to all of his men. He must be willing to listen to their troubles with understanding and sympathy, and if he cannot remedy the cause of their complaints, he must take them where they will be "cured." Regardless of whether a decision is rendered by the employee's immediate foreman or by the president of the organization, it must be a decision that is recognized as just and fair, clear of discrimination against either the worker or the company.

A foreman or superintendent should visit his men. A man's attitude on the job is generally a reflection of his domestic life. Probably no company does this so completely as The Ford Motor Company. Here they attempt to iron out family difficulties, in order that the minds of their workers will not be distracted by domestic "ailments" to a point which will interfere with efficiency and safety.

By impromptu visits, much can be learned about the laborer's living condition, domestic status, and various other personal things that the man does not resent his employer knowing. He appreciates his interest. Occasional personal inquiries, in passing, as to the condition of

the employee's wife's health; his son's work, or the progress of certain hobbies the worker may have, tend to make the worker feel and say that "Mr. Doe is a real guy!"

The Ford Motor Company, mentioned above, does its "visiting" through its personnel department. Upon a foreman's suggestion, a man's status "at home" is quietly investigated in order to disclose any irregularities which might be interfering with his work. This company has found that mental attitude is an important factor in mass production efficiency. Should domestic troubles, or bad living conditions be apparent, the matter is talked over with the family in question; the possibility of accidents, loss of job due to inefficiency and other factors are pointed out. If reconciliation is impossible, the family is ordered to vacate the company's home, and the employee discharged.

This procedure may seem drastic, but no corporation can compete efficiently in a certain field with groups of mentally unbalanced persons employed. The National Safety Council in a recent bulletin, gives the story of an employee in a large plant, who was caught three times violating rules. All violations occurred within fifteen minutes. The man normally was an efficient and careful worker, and

upon questioning, it came out that the man's wife had attempted suicide earlier in the morning, and the man was worried about what she was doing at that time. Each of the violations could have resulted in death; breakdown of expensive machinery; loss of efficiency and morale among other workers, not to mention compensation and unseen costs arising from the accident. This man's status was definitely "patched up" by a visit, and the man's efficiency returned to normal.

Several small companies in the western states make it a policy for their foremen to call on employees who are ill or injured. A written report is due each week on each employee who is ill. These reports show the time of visitation; mental condition of employee; status of the employee's dependents and recommendations. This same set-up is used in many cases where a man grows careless or his work slumps off. An investigation followed by recommendations usually results in adjusted conditions.

EMPLOYEE REPRESENTATION

The purpose of employee representation is to assure regular and frequent contacts and conferences between management and selected employees representing the general forces, to discuss the facts and conditions of employment from the view point of both management and labor. Undertaking, by these discussions, to arrive at a right understanding of facts, thereby establishing conditions that are mutually satisfactory.

Employee representation also provides an opportunity to discuss matters pertaining to the business and its operations. Here, management, may determine the interest and desires of the employees in plans or projects designed to promote their personal well being, so that in the end, the best interests of management and labor will be served.

The foundation of success of any representation plan lies in the establishment of a joint committee made up of representatives of the management and of labor. It provides a definite channel whereby management can make known its wishes and opinions as well as the wishes and desires of labor. It provides a procedure by which the adjustment of individual or group misunderstandings, complaints or grievances can be attempted.

The success of any plan of employee representation depends upon the sincerity of purpose of the management and the workers to regulate their mutual interests through co-operation. Where the plan has not been based upon worthy motives, the plans invariably fail.

To state that an employee representation plan will work in all cases would be entirely false. In many instances, such a group is entirely unnecessary. The employer will naturally veer away from anything that leans toward "unionism." Through "unionism" only labor trouble can be seen. However, in many cases where it has been necessary to organize such groups it has been successfully worked out to the mutual satisfaction of all parties.

In August, 1932, the employees of The Mannassa Mining Company asked the management to sanction employee representation resembling the plan outlined above. The management attempted to discourage the idea, because a similar plan had failed. The old plan which was inaugurated in 1926 failed dismally and had been dropped in 1931. The employees insisted on some form of representation, and the management finally sanctioned the plan. The new plan went into effect in January, 1933, and has worked successfully to the present time.

It is thought that this company's experience with a

failure and a success is typical of the two types mentioned above. Numerous factors have entered the "picture" between the times of success and failure, and an examination of minutes of old meetings and of meetings of the present organization disclose many interesting things.

In 1926, the organization held ten meetings. During the entire year, only three subjects were discussed. They were, housing, wages and working hours. It can easily be seen that these are all labor points. Only one of these points was definitely settled and that was the matter of housing. Labor's representatives had maintained that the rents should be reduced and electric power furnished free. This concession was granted on the condition that there should be no change in wages or hours.

During 1927, the two same questions of wages and hours were brought up in addition to the points of benefits and pensions. Again, we see labor points. None of these were settled during the year!

The next four years showed practically the same conditions, with neither the company nor labor giving any "quarter." However, labor gained additional wages in the form of a bonus, and a concession to operate a mercantile establishment, which subsequently went into bankruptcy. Management had been allowed to raise rents slightly!

A strike was called by the labor representatives, who insisted that the work day should be shortened with no lowering of wage rates. At the same time, the management was presented with a petition signed by approximately 45 percent of the employees, stating that they did not want to strike, and would appreciate an investigation of the employee council from which labor's representations leaders were chosen.

The strike was broken by the signers of the petition, and a subsequent investigation of the manner in which labor's representatives were selected showed that the employee organization had become a local union, controlled by a foreign element. This element was extremely radical, and the better element had entirely refused to appear at meetings, consequently their decisions were not those of all the men. The entire plan was dropped.

In 1933, the new plan went into effect. The first act of labor's representatives was to express the appreciation of the men for the wage and hour conditions that the company had adopted prior to their organization, and to assure the company that they had no complaints or grievances. Incidentally, the advent of the NRA code, adopted in February, 1934, did not change the pay or hours, both being well within the limits allowed.

The main point the employees gained during 1933 was the establishment of a medical plan, supported by the

company and the employees. Another point gained was the establishment of a safety department, which the management endorsed very strongly in view of its origin.

In 1934, the company and the men established a recreational park, using company furnished material, and employee donated labor. A Camp Beautification Program was inaugurated by the employees, and at the present time, housing conditions are better than they have ever been in the past. The establishment of a mercantile Association, whereby the employees are paid dividends in proportion to their purchases, has been established which materially reduces living costs and encourages thrift.

The management has benefitted by a sharp increase in efficiency. Looking over their figures for "tons produced per man shift underground," we find a low of 9.62 rising to a high of 19.57,* with an average of 17.42! Compensation rated at \$6.00 per hundred dollars payroll has dropped to less than \$3.00. The company has the reputation of having one of the safest and most efficient mines in the Southwest. Labor turnover has decreased to the point where it is negligible.

Why was this plan successful where the other failed? The author had the privilege of attending early meetings

* The author does not intend to allege that all this was due to improved morale, certainly some was due to improved equipment, and management of same. It is thought, however, that improved morale contributed materially.

of the employees where the problem was discussed, and representatives were selected. At the first meeting someone suggested that an organizer should be brought in to get them started. Several of the leaders of the movement, who remembered the past experience told the men about this, and told them that if they insisted on an organizer, they would withdraw from the association. These same men head the present association, and are labor's representatives at conferences. Through all the meetings these men try to keep the men from thinking about individual complaints and grievances, and get them to thinking about things which will do the entire group the most good.

It is thought that the experience of these leaders will keep history from repeating itself in their present organization. With the personnel department co-operating no radical element should enter in to disrupt their constructive plans.

To say that all representation plans will work would be false. To say that under certain specific conditions a plan is beneficial to management and labor is true. Both parties to a contract must not take advantage of individual strength, but must attempt to see the other's viewpoint, and mutually agree on common ground. Action

other than this, on either side, will make for mutual disrespect, dissatisfaction, and distrust.

The failure of many industries to meet representatives of labor, aided labor in obtaining a definite status which has caused much discussion, and much labor trouble. This status was given labor under the provisions of the National Recovery Administration's "Code of Fair Competition," Section 7-A.

This one section has never been clearly defined, and has led to a strengthening of organized unions at the expense of the employer and the employee, as well as inspiring a mutual antagonism between "labor and capital."

Labor and the industrial organization must make major concessions to one another if any understanding is to be achieved under "7-A". Labor must learn that laws apply to them as well as to the industry that employs them. Industry must be willing to concede certain amounts of its profits for loyalty and efficiency in their employee personnel.

THE MEDICAL DEPARTMENT

Of all measures contributing to the security of the individual in his physical and economic status, good health is perhaps the most important. Sickness and poor health strike at the very root of the worker's productive effectiveness, threatening the economic security of not only the worker, but of those dependent upon him.

The slow development of industrial hygiene and sanitation was due largely to general ignorance of the subject. In all probability, it was first started by some industry whose location was isolated, and made the establishment of medical service necessary. Probably the most decisive step toward industrial medical care was made in 1910 when some state legislatures adopted laws, with enforcement provisions, for placing upon employers the obligation of adopting means for workmen's compensation insurance. Before, courts and employers alike, had always considered health and accidents as "risks of the trade."

After employers began to realize that compliance with these laws was necessary, and a health service had been established, they apparently began to realize that if they desired maximum efficiency in their organization, they must have physically competent men working for them. Probably due to the findings of these pioneers, others have

followed their example and have gone far beyond the existing legal demands in providing medical service for their men.

A typical service developed by a small industry covers the following points: (1) Treatment of accident cases arising during employment; (2) physical examination of old and new employees; (3) Prevention and treatment of minor illnesses; and (4) advice to all employees and their immediate families on matters pertaining to health and sanitation.

Some persons may wonder why all these services are necessary in order to obtain an effective medical service. Under the first service mentioned, no one will deny that this is an obligation of industry, and is imposed, where not willingly done, by compensation laws in virtually every state.

Considering the second service, it is generally considered among personnel and safety directors the country over, that this is the most important of all duties. A physical examination at the time of employment will tend to throw applicants into four classes. The first, and by far the largest group, consists of those in good physical condition, capable of holding almost any job. The second class include a smaller number, which have certain physical defects which limit their ability, and must be put on certain jobs. A third class consists of those who have certain defects which must be remedied before employment can be offered.

The fourth class consists of those who are unfit for any job whatsoever.

An industry must select men from the first three classes. If it does not do this, then it is not discharging its social obligation. To select only those who are in the first class, when certain positions could be adequately filled by those in the second or third class is unfair to the community in which it is operating. Most industries refrain from using only first class labor.

It is from these early physical examinations that the employee's health record is started. To continue that record means a periodic checkup as to health and physical condition during employment. By following this method industrial diseases may be caught before they become chronic. This is especially important in industries where there is a dust hazard. The problems of silicosis present a challenge to the mining industry, to better working conditions; and the fight against silicosis can only be gaged by the physical condition of the men employed.

The third service is rendered primarily along the lines of sanitation. The worker and his family must be taught the value of personal hygiene. Minor illnesses should be treated as quickly as noticed, in order that speedy recoveries are possible, and that the individual production

falls as little as possible.

This service is primarily educational. Much good along these lines has been accomplished by use of plant magazines, which assign some of the best space to the medical department. The trained nurse, employed by the company, working among the families of the workers can do much toward the promotion of health education and sanitation.

The fourth service is, perhaps, self-explanatory. How many of us have not been confronted with some health question that needed explanation? Too many of us neglect getting this help because of the expense attached. When such a service is available free, men will use it!

In support of the points mentioned above, the following experience is offered. By a concerted effort on the part of the management and employees of a small company, a group of physicians organized a medical service that would do credit to organizations much larger.

The management met with a group of physicians and employees and worked out a plan which was inaugurated January 1st, 1933. Due to the fact that the charge to employees did not cover the service, the company "matched" each employee dollar in order to maintain the plan. A governing board consisting of one physician, one company official, and one employee supervised expenditures of the hospital, set rates, and drew up a set of operating rules for the men.

The following excerpts from the regulations are given:

"BENEFITS. Hospital treatment, when in the judgment of the surgeon it is necessary, subject to exceptions.

"Dispensary and home treatment for all other conditions, when in the judgment of the Chief Surgeon it is necessary, subject to exceptions.

"Members of families of married employees will receive dispensary and home treatment free, subject to exceptions, and may be admitted to the hospital on payment of one-half regular charges, subject to exceptions.

"In all cases hospital service will be subject to available accommodations, provided that employees injured in line of duty shall have priority.

"Families of employees shall include, wife, children, and dependents actually regularly resident in the same house. Children over sixteen working for an employer other than the company are considered self-supporting and therefore not entitled to treatment. Servants of employees are not entitled to treatment."

"EXCEPTIONS. Treatment will be refused for ailments due to venereal diseases, alcoholism, vicious habits, injuries received in fights, unlawful acts and chronic diseases. No treatment will be given for contagious diseases subject to Federal, State or local control or quarantine."

"SURGERY. Chronic cases will be treated by charging a fee not to exceed \$125.00 for major operations, and not to exceed \$50.00 for minor operations."

"X-RAY. X-Ray examinations for all acute or recent injuries to employees or their families shall be free."

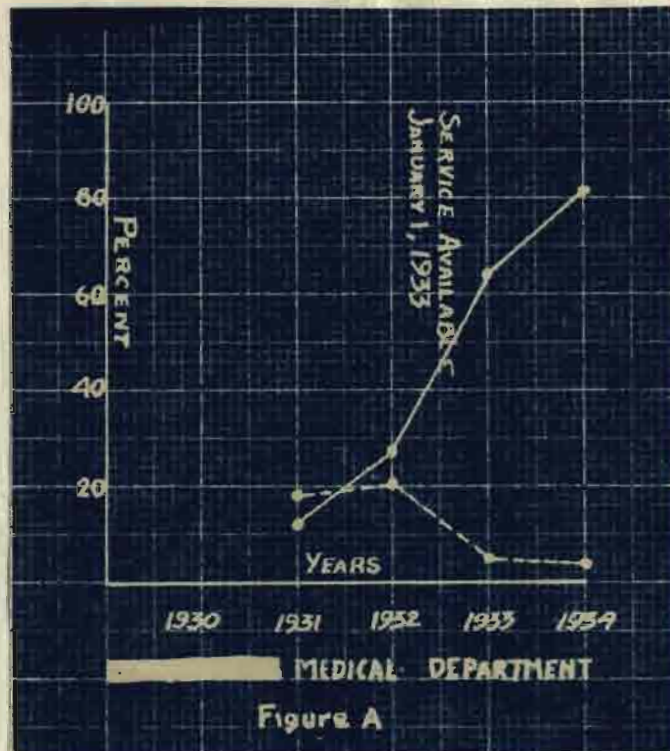
"OBSTETRICS. For normal cases of confinement, a charge of \$25.00 will be made. For instrumental or complicated cases a fee of \$35.00 shall be charged.

"Confinement cases may be admitted to the hospital by making application at least two weeks in advance of expected labor. A charge of \$4.00 a day for board, room and nursing will be made."

"MEDICINE. All usual remedies prescribed by the physicians of this department will be furnished free, but specific remedies, such as serums, vaccines, and those used for chronic conditions will be charged for at cost."

This data gives the essential facts concerning the plan. Numerous other points enter in the regulations, but they are of no great importance.

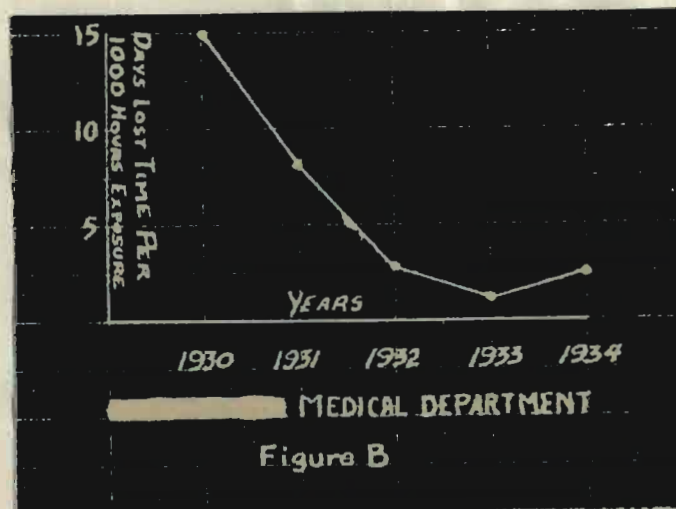
Whether this plan will continue to be as successful in the future as it has been to the present time is a matter of conjecture. By studying Figure A, the results that have been obtained by this association are at once apparent.



The solid line shows the number of employees of this company/^{that}were treated by any doctor during a period of four years. For 1931 and 1932, the records may be somewhat "clouded" due to inaccuracy in obtaining reports, but the steady rise in 1933 and 1934 shows the percentage of employees or members of their immediate family who made application for treatment, information or some medical service.

The broken line shows the percentage of these same employees who were off work for a day or more due to sickness. These records are accurate and conform with what

was believed at the time the health association was formed. That is, by treating illness scientifically, disability and sickness can be averted. This also proves that employees will take advantage of medical service if it is available.



The result of this same association with regard to the severity of accidents is shown in Figure B. During the two years previous to its formation severity was much higher than in the latter two years.

By reducing illness and disability, the employee and his dependents do not suffer so much financially, nor does the company lose the productive services of an individual for such an indefinite period.

THE SAFETY PROGRAM

Second only to a good health service is a sound program of accident prevention. With a health program we protect the worker's health both on and off the job; virtually the same thing is attempted in the safety program. Accident prevention goes hand in hand with the medical service, for it is an established fact that physically unfit men are hazards to themselves as well as to any industry which may employ them.

A good safety program helps to provide security to the employee on the job. We must remember that security for himself and through him for his dependents is the main thing which makes the laborer a loyal and efficient man.

How many of us would like to work for any concern, regardless of wages, if we knew we were going to be seriously hurt? Not many would even consider the work. It has only been within the last few years that industry has realized that accidents cost money--not only to the employee but the company also. Perhaps the employer's motive for an accident prevention program is not entirely altruistic, but partly a search for lower costs. Each accident costs industry money due to drops in individual

and collective production, waste products, damaged machinery, lowered employee morale, and thousands of other intangible items which cannot be enumerated.

Most people think that accidents "happen." They do not happen--they are caused! With the exception of "Acts of God", every accident could have been prevented had proper foresight been exercised. Efforts are even made to ward off "Acts of God" by the use of lightning rods, levees, and various other means. Statistics of industrial accidents, show that approximately 97 percent of them could have been prevented if the management had made the proper preparation to prevent accidents, or if the worker himself had exercised reasonable care.

Many elaborate plans have been formulated for the prevention of accidents in industry. Regardless of the type of work performed, and regardless of the size of the concerns, all of these plans are based on a few fundamental principles. Carrying out these principles involve comparatively little expense and assures the success of the plan to make safety an integral part of the operating organization.

Ten steps are necessary in starting a plan to prevent accidents from which real results may be expected. These

steps usually follow in the order listed below:

1. Obtain the Co-operation of the Manager. The manager must do his part by putting "safety on the map," making it a necessary part of the process of production; get back of it, and keep back of it so actively that every foreman and worker will know just what the company proposes to do to help make the plant safe. Any safety organization without an enthusiastic manager behind it is headed for failure before it starts.

The manager must convince the men by visible signs, in the form of mechanical guards, good lighting, and other features, that he is doing his full part. It is especially important that the manager bring his superintendents and foremen to believe in safety just as they believe in production.

2. Obtain the Co-operation of the Superintendents. The superintendent must make safety an integral part of the operating organization.

3. Appoint a Safety Director. One man should be designated to direct the safety program. In a small plant it may be advisable for the manager himself to carry this responsibility. In a large or medium sized plant, he may give this responsibility to an assistant whose duties and qualifications will determine whether he should be

known as safety engineer, safety director or by some other equally significant title.

In addition to a knowledge of safety, the successful safety director must have nearly every personal qualification that is to be found in successful men in all walks of life. He should have vision, initiative, persistency, judgment, diplomacy, leadership and, above all, sympathy. It must be realized that this man is the key man of the entire safety organization, and upon him depends whether interest and enthusiasm can be maintained.

4. Analyze Accident Records. After his appointment, the safety director should analyze the accident reports for the past year or two, to learn, if possible, the how, who, where, when and why of each accident. By studying this analysis he is able to concentrate first on those points needing safety supervision more than others.

5. Hold Meetings of All Operating Executives. All foremen, superintendents and operating heads should then be summoned to a general meeting presided over by the manager or general superintendent. At this meeting an announcement of the safety program should be made, and the appointment of the safety director pointed out. Here, departments with the worst records should be pointed out from the analysis and the manager should make his position clear, regarding what he expects in the future.

6. Make Inspection of Operations. Following this meeting each foreman should make a complete inspection of his department. This inspection is merely to note those things necessary for mechanical safeguarding.

7. Start Mechanical Safeguarding. The safeguarding program should then be developed and carried out, making sure that the most serious conditions are corrected first.

8. Make General Announcement. Not until these other steps have been completed should the workers be acquainted with the accident prevention plan. They now have concrete evidence of the management's interest due to safeguards and betterment of conditions.

9. Organize Educational Work. Formulate a program to maintain interest and increase knowledge of management, foremen and workers in safety. This is the biggest problem that confronts the safety director, and it is here that his initiative and understanding of men plays a big part. Interest can be stimulated by various means, for instance; rule books, classes in safety and first aid, prizes and bonuses for safety, departmental contests, mass meetings, and hundreds of other interest stimulating things.

It is of course not advisable for the safety director to attempt to carry on too many activities at the same time. The educational program must give variety if it is to im-

press the workers and their families.

10. Consider Engineering Revision. The safety director and management in general should consider methods for improving machinery, equipment and processes to eliminate hazards and increase production efficiency. One of the companies that pioneered in engineering revision as applied to power presses, has practically eliminated all power press accidents, whereas they used to cut off an average of 36 fingers a year. Not only that, but the production of those presses has been increased 60 percent.

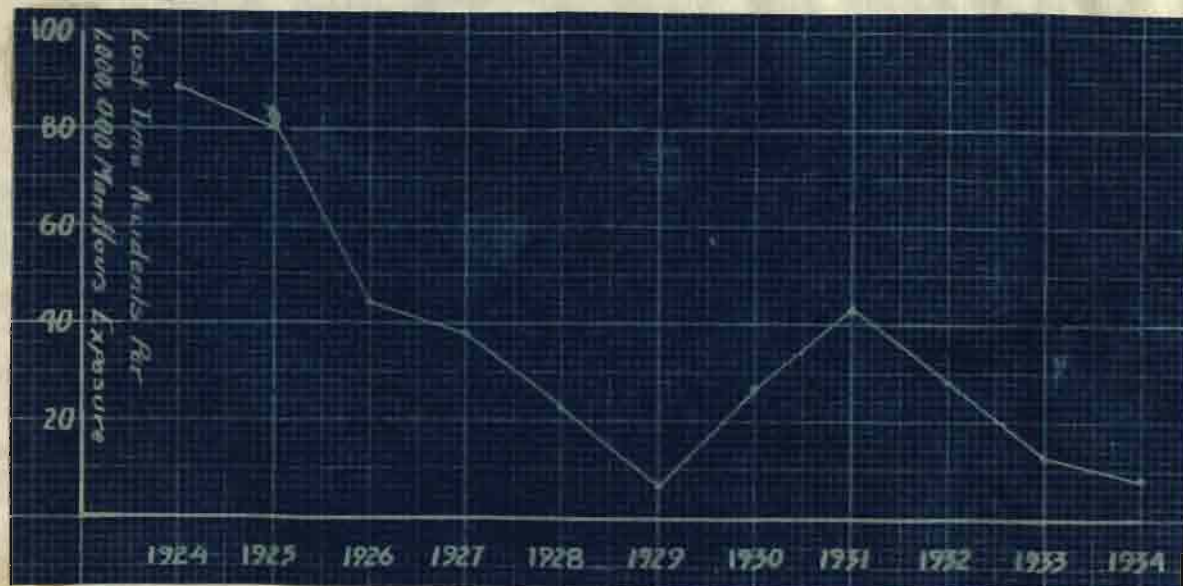
Typical records of accident reductions for a two year period, using the methods listed above, and applying to both large and small plants are given below:

COMPANY	% Frequency Reduction	Av. No. Of Employees
G. M. C. Janesville Plant	38	634
Smith Typewriter Co.	58	1,255
Victor Chemical Works	83	226
U. S. Potash Co.	87	450
Jones & Laughlin Steel Co.	65	10,016
Brown Paper Mill Co.	85	400
Humble Oil & Ref'g. Co.	27	11,175
Pennsylvania Rubber Co.	53	1,187
Wagner Electric Corp.	57	1,790
Koss Construction Co.	78	450
Long-Bell Lumber Co.	41	729

Such records as these shown above are not at all uncommon, but can be obtained by persistence and hard work on the part of all the employees co-operating with the management.

Of interest to the mining industry in particular, is the problem of mechanization and what it does to the safety program. Correspondence with the safety director of a large western coal mining concern shows a typical example of the effect of mechanization upon the safety program.

This company actively went into the accident prevention field in 1924, and achieved a splendid record during the next six years. During the summer of 1930 the company mines were entirely mechanized, and a sharp rise in accident frequency is seen for 1930 and 1931, when again, the accident frequency starts falling off. At the end of 1934 they have almost gotten back to the old safety record of 1929.



This graph shows the situation very plainly. Frequency of accidents being the number of lost time accidents per million man hours exposure.

Why should there be this sharp increase in frequency during 1930? It was during 1930 that an entirely new production program was started, and the workers were not entirely familiar with the new equipment. A definite educational program concerning the hazards of this new type work had to be planned and carried out. As soon as the men became accustomed and familiar with the hazards, accidents again fell off.

Management is generally favorable towards the safety movement, once it is shown a definite increase in efficiency and a lowering of costs.

The following page carries four graphs showing the experience of The Mannassa Mining Company mentioned earlier in this paper, which conclusively prove to the management of that company that they have benefitted by increased production, decreased frequency (which lowers insurance rates), decreased severity which keeps individual production up, and a low labor turnover.

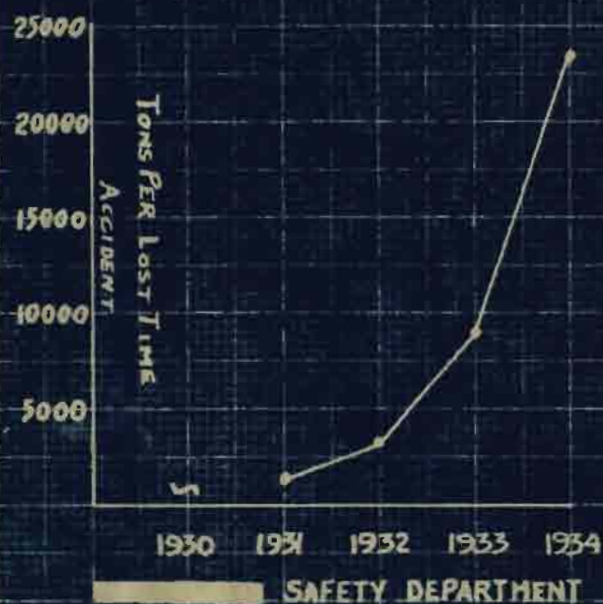
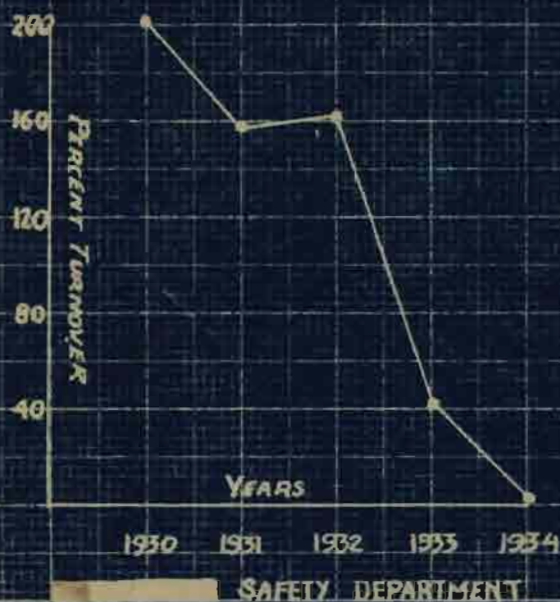
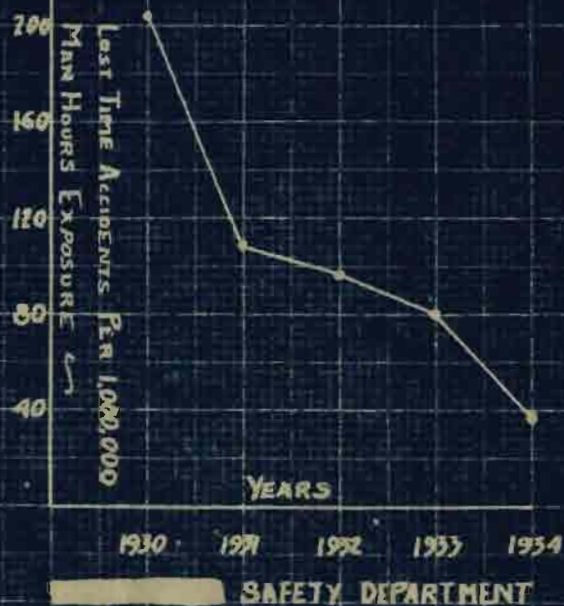


Figure B



WAGE PAYMENT PLANS.

A survey by the U. S. Bureau of Mines among 80 mines offers the following data concerning pay systems.

16 percent of the mines were on a day's wage basis.

8 percent were on day's wage basis except mucking, which was done on a piece work basis.

18 percent did development work on contract and other work partly on contract or bonus system and partly on day's wage basis.

18 percent did development work on contract and all other work on day's wage basis.

40 percent did practically all work on a contract or bonus system.

The author favors the "contract and bonus" systems which have become highly developed in the copper mines of Arizona. It is estimated that 80 percent or more of all work done in these mines follow some such system. Development is nearly always on "contract" per foot with wages guaranteed; stoping is on "contract" per cubic foot or on bonus for extra tonnage; tramming is on bonus for extra cars over base number; timbering is on "contract" per set stood.

The contract system developed at the United Verde is complete in virtually every respect. A fair amount of work done safely by an average man in a given unit of time is the standard for any particular job. The efficiency of the job is calculated as follows:

If the standard for a job is one unit per shift, and a man accomplished $1\frac{1}{2}$ units per shift, he is rated as being 150 percent on that job. He receives as bonus one-half of his increase in efficiency over 100 percent, or 25 percent of his day's pay rate. The company benefits by the other half. Putting this into a formula, it may be expressed as follows:

$$T_2 = P/2; \quad E = T_2/T; \quad B = \frac{1}{2}(E-100)W$$

S = Standard (unit of work per unit of time.)
P = Work Accomplished.
T = Time Required for Doing P.
 T_2 = Time Allowed for Doing P According to S.
E = Efficiency in Percent.
W = Wage Rate per Unit of Time.
B = Bonus Paid.

Obviously, the major problem is to determine correct standards of work. The setting of standards depends largely upon past performance and upon the judgment of the man setting the standard. The men chosen to set rates must have had considerable experience themselves in doing and in bossing the work they are rating. Such a man inspires the respect and confidence of the workers. The foremen are consulted whenever a new standard is set.

Contracts as used at The United Verde are not contracts in the true sense of the word. All agreements are verbal and the worker assumes no obligation. The company agrees to pay a certain price for a certain unit of work, but the man is guaranteed day's pay no matter how much he accomplishes. Also, the company retains the right of complete supervision over the work and the manner in which it is to be done. The contractor has nothing to say about who his helpers will be, although an attempt is made to put men of equal ability together. Each man is responsible to the company only and they are paid separately by the company. An example of contracts follow:

Credit 10 chutes at \$10 = \$100.00

Only 5 shifts are required by a timberman at \$5.23 a day, and 5 shifts by his helper at \$4.68 a day to erect these 10 chutes.

Deductions from Contract-- $5 \times 5.23 = \$ 26.15$

$5 \times 4.68 = \$ \underline{23.40}$

Total Deductions \$ 49.55

$\$100.00 - \$49.55 = \$50.45$ which is profit and must be divided between the two employees and the company. In other words, the company saves \$25.22 on the ten chutes and the remaining \$25.23 is divided between the two employees in proportion to their days wage.

Total wages of 2 men/ shift = \$9.91

Due Timberman $\frac{5.23}{9.91} = 52.7\%$ of 25.23 = \$13.29 as bonus.

Due Helper \$25.23 - \$13.29 = \$11.94 as bonus.

Wage to Timberman for 5 shifts + bonus = \$39.44 or \$7.888 per day.

Wage to Helper for 5 shifts + bonus = \$35.34 or \$7.068 per day.

Total Labor Cost to Company of 10 chutes = \$39.44 + \$35.34 = \$74.78

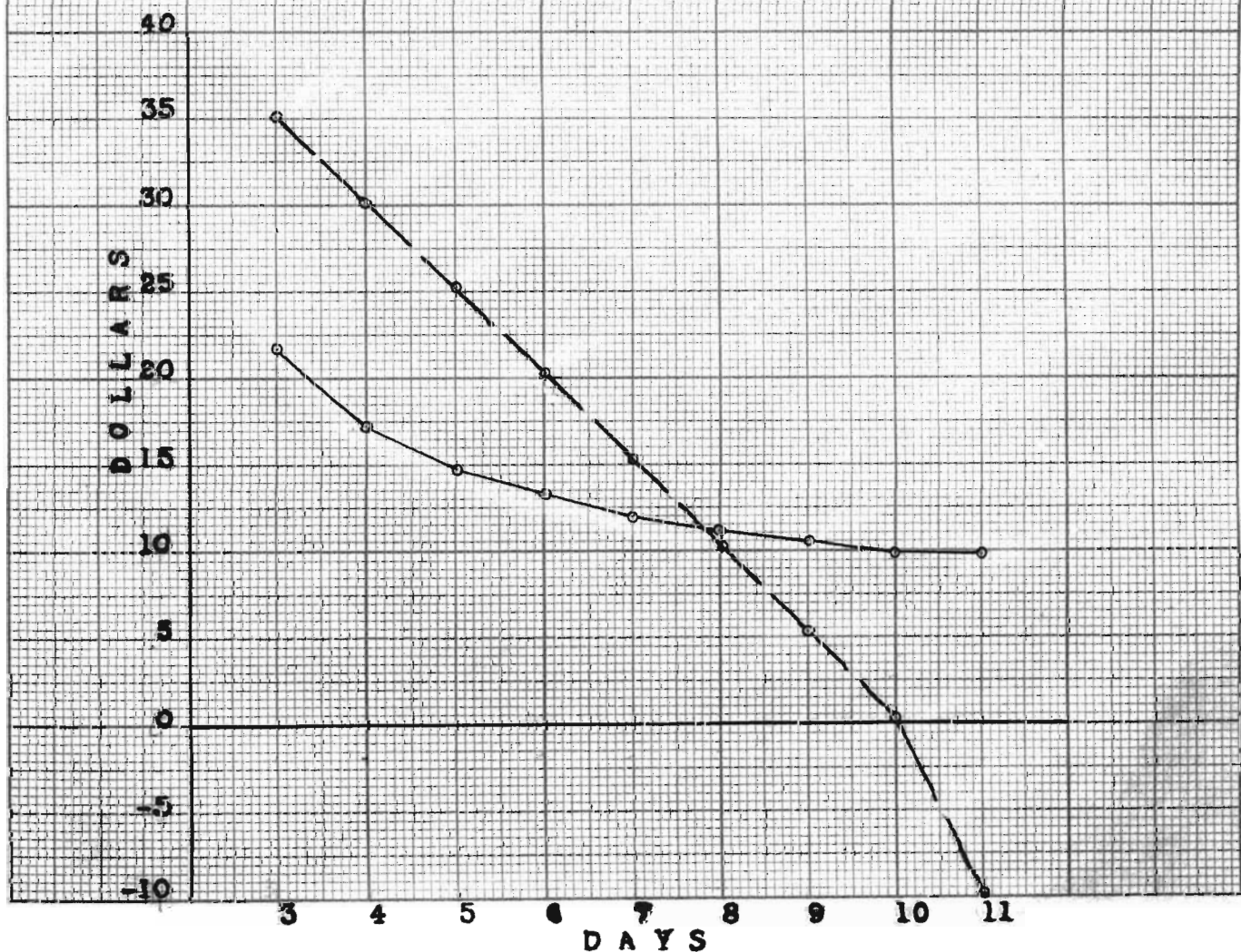
Savings of Company \$100.00 - 74.78 = \$25.22

Based on the same two men building 10 chutes in various numbers of days, the following earnings (wage + bonus) would be made by them, and these savings or losses result to the company. The figures are plotted on the following page.

DAYS	EMPLOYEE EARNINGS/DAY <i>2 men</i>	COMPANY SAVINGS
3	\$ 21.623	\$ 35.13
4	\$ 17.455	\$ 30.18
5	\$ 14.955	\$ 25.22
6	\$ 13.288	\$ 20.27
7	\$ 12.025	\$ 15.32
8	\$ 11.205	\$ 10.36
9	\$ 10.510	\$ 5.41
10	\$ 9.955	\$.45
11	\$ 9.910	\$ 9.01 1038

Curve based on the building of ten chutes at a standard price of \$10.00 each, by a timberman @ \$5.23 per shift and helper @ \$4.68 per shift, for a various number of days.

The unbroken line shows the total net wage plus bonus paid to both laborers. The broken line shows actual dollars savings to the company, or losses as will occur after the tenth day.



Two advantages of this type of contract over the bonus system in use at The United Verde, are that the contract is easily understood by the miner, and he visualizes his units of work accomplished in dollars, which acts as an incentive to greater efforts. Also, in the case of development work, it rewards the miner for saving explosives, while under the bonus system the tendency is to be extravagant and wasteful.

A comparison with their bonus system is also interesting. A bonus standard at the "Verde", for a drift might be 2 feet per shift. The average bonus for drift work was somewhat under 50 percent, but good miners, under favorable conditions, often made 50 percent or better. To make a 50 percent bonus in the above drift, the miner would have to average 4 feet advance per day and this would cost the company \$4.95 plus 50 percent of \$4.95, equalling \$7.42, or \$1.855 per foot for labor. Then, if \$1.90 per foot were allowed for explosives, the contract price would be \$3.75 per foot. If the miner broke 4 feet per shift and just used the amount allowed for powder, he would make just the same amount of money as if he worked on a contract or bonus system. To make more money on the contract than on the bonus, he would have to reduce the amount of powder used per foot, or increase the amount of advance per shift. If he

fails to make an advance which would have paid 50 percent bonus under the bonus system, or if he uses an excessive amount of powder, he will not make as much as if he were on bonus instead of contract.

The company gets the work done at a certain fixed price whether the miner makes a good bonus or not, unless he shows a loss. In case of a loss by a contractor, the cost to the company is increased by the amount of the loss over the agreed price.

The United Verde has found that in every case where a fair standard was set for bonus work, it resulted in lowering the cost of that operation, and that the men doing the work earned more money than before.

There are certain disadvantages to the contract system in that the company may pay at the set price a greater amount than would be paid on day's wage basis, when factors causing this payment did not result from skill or efficiency on the worker's part, but in a sudden change in conditions; or, the computations necessary in order to set a standard are so complicated that the average laborer will not understand it, and he will become suspicious of the system; and, supervision is difficult, as the contractor is inclined to do work of a poor and unsafe quality in the attempt to make speed.

In spite of these disadvantages, the contract system

usually results in more efficient work than does the day's pay system, especially for certain tasks which can be more or less standardized, where conditions do not vary widely, and where the management is able to train certain men to do specific kinds of work. Its use means that the company can figure on a definite labor cost for specific pieces of work, and can expect a maximum speed in getting the work done.

BENEFIT AND PENSION PLANS

Benefits and pensions appeal directly to the worker's desire for security. The problem of compensation to worker's during periods of sickness, accident, unemployment, and death have long been considered by both employees and employers.

The author was privileged to draw up and submit to the management of a medium sized mining company a pension plan which was accepted. Time alone will prove whether or not such a plan can be successful, but from all present indications the plan is successful.

The object of the Benefit Association was to provide its members with an income when sick, disabled by accident off duty, or disabled for less than one week by accident suffered on duty, and to pay families of members definite sums in case of natural death or death from accident off duty, and to create and maintain a fund which would belong to the employees, costing them through economical management as little as possible to be used for the payment of benefits to them.

The Benefit fund consists of funds contributed by members, income from investments, gifts or legacies to the fund, and contributions by the company. The legal

title to the fund is in the name of a Board of Trustees.

Company contributions are figured in the following manner. At the end of each fiscal year, if the average number of members in the Association during that year has equalled fifty percent of the average number of employees, the company will contribute \$1,000.00, and if this amount is insufficient to meet any deficits after the dues and contributions of members are expended, the company agrees to contribute the necessary additional amount to meet such a deficit, limited to \$5,000.00 for any one year. The company has reserved the right to withdraw and terminate its obligations on giving one year's notice.

Employee contributions are made as follows: Upon entering the service of the company, the new employee is given an invitation to join the association. Should he desire to accept the invitation, he must fill out an application form which directs the company to withdraw from his wages \$2.60 per month should his wages be more than \$5.00 per day, or \$1.73 per month should his wages be less than \$5.00 per day. The application also shows to whom benefits are payable, and makes certain statements concerning the applicant's understanding of the rules and regulations.

The governing board or Board of Trustees consists of

the General Manager, who is chairman of the board, and eight members. Four of these eight are members of the association, and the other four are appointed by the directors of the company. All members, including the chairman, are entitled to vote. Elections are held each December for the Association representatives from members.

This board appoints a superintendent and a treasurer of the benefit fund, and generally supervises their work, seeing that all operations are conducted in accordance with the regulations.

The superintendent of the fund has charge of all business of the association, signs all orders for payments of benefits, and furnishes the Trustees with any reports that they may require.

The treasurer is also under the direction of the Trustees, and has charge of all the money of the association, which he pays out on the order of the superintendent. Money is deposited or invested in such places as the Board may direct. The treasurer is bonded for the faithful performance of his duties.

As stated before, membership is offered to all new employees, who have satisfactorily passed their physical examination, and membership is open to all employees under

sixty years of age. Members may withdraw from the association by giving the superintendent 15 days notice, or in case of leaving the company's employ their membership terminates at the end of 30 days.

The benefits paid out under this plan come under two classifications, according to the amount contributed by the individual member. Benefits do not continue beyond a 52 week period, at which time the association has filled its obligation. Benefits are not paid in any case where benefits are being received under the Compensation Act or Personal Liability Act.

Sickness benefits amount to \$2.50 per day, including Sundays, for those donating \$2.60 per month, and \$1.66 per day, including Sundays, for those donating \$1.73 per month.

Accident benefits amount to exactly the same thing where the accident occurred off duty, but where the member is injured on duty, he is paid the above rate for a period of seven days, when the Compensation Act becomes effective.

Lump settlements are offered in case of permanent total disability or death, according to a definite scale. In no case do amounts paid exceed \$1,000.00.

A pension plan has been set up by this same group of men in order to provide the employee with a measure of se-

curity after the close of his productive years of service. No organization has the financial strength to administer pensions liberal enough to support a retired employee fully during his declining years. It is not socially sound to take from an employee the responsibility of providing for himself in later years. Thrift should be encouraged and promoted among the men in order that they may have some money "laid by" to take up the "slack" between pension payments and actual living expenses. The problem of encouraging thrift is one which can best be handled by the company which has knowledge of conditions confronting their aged employees. Management should attempt to get all their men interested in sound investments, and savings accounts. It is a problem, again, of education!

The pension plan in effect at the company mentioned before is managed by the same Board of Trustees handling the Benefit Association's monies, but a separate fund is kept. To date, no employees have been retired, and the company is making an actuarial study. Money accumulated in the pension fund is invested at the discretion of the Board of Trustees.

The money in this fund is built up in the following manner. From the beginning of employment, each year of service of each employee in the organization creates a

liability against the pension fund. The company donates to this fund a sum of money equalling one percent of the total employee earnings during the year. This money is invested by the Board, usually in negotiable government bonds and securities.

At the completion of the actuarial survey, probably a definite payment plan will be set up, which may follow these lines:

A certain number of years continuous service necessary before the man becomes eligible for a pension. Let us say 30 years for convenience. Take one percent of the retiring employee's average monthly earnings for the past ten years, and multiply that amount by the number of years continuous service given the company. The resulting amount would be the monthly payment. Example:

Doe averaged \$200.00 per month for 10 years preceding retirement, and has worked thirty consecutive years. His monthly retired pay would be figured in this manner:

$$.01 \times \$200.00 = 2$$

$$2 \times 30 = \$60.00 \text{ per month pension.}$$

It can easily be seen that in most cases this would not cover living costs--THRIFT is necessary!

UNEMPLOYMENT INSURANCE

There is probably no greater fear ever descends upon the worker than the fear of unemployment. If he has never been unemployed, he has friends who have, and on every hand he reads of the utter poverty among the workers without jobs, and visualizes himself and his family among them. Many employers have made some provision to cover unemployment, but so many have made no effort along this line, that it is very apparent, at the present time, that the national law making machinery will be set in motion to provide some sort of protection against unemployment. Just what line it will follow is doubtful, but two states have plans which are in effect now. These states are Wisconsin and Ohio.

Under the Wisconsin plan, each employer builds up his own unemployment fund, paying into it 2 per cent of his payroll at first. Later, when there is \$55.00 on hand for each employee, the payroll charge is reduced to 1 percent and when there is \$75.00 on hand for each employee, the contributions cease. From this fund, the unemployed worker may draw not more than \$10.00 a week, for not more than 10 weeks in any one year.

The employer is not liable beyond the amount in the fund, and the idle worker shares only in proportion to the time he has worked for that employer. It is an "unemployment reserve" plan, rather than "unemployment insurance." In its theory, it makes unemployment a recognized business cost of a specific industry. If that industry is not able to take care of its own unemployed, it is not paying the full cost of production, and is thus receiving a subsidy from the community.

Under the Ohio plan, however, a state fund is created into which come all payments from all employers and employees. Out of this an unemployed worker may take out more than he and his company have put in, drawing upon the accumulated payments of others who are more fortunate in keeping their jobs.

For example, assuming a working wage of \$30.00 a week or \$1,500.00 yearly, the employer pays 2 percent for two years and the employee 1 percent. There is a total of \$90.00 in the fund for the employee in question, who then loses his job. The man may draw out half of his wages, that is \$15.00 weekly, for 16 weeks, or \$240.00. He is guaranteed this sum, no matter how far short of it have been the premiums paid by him or his company.

The Proctor and Gamble Company in 1922 inaugurated a plan guaranteeing to a worker after one year in its service, that he shall not be unemployed in excess of four weeks in any calendar year. In 1932, the plan was modified so that the employee is guaranteed only three-fourths of a week's work for those 48 weeks. Meanwhile, the established hour-week has been reduced from 50 hours to 40.

General Electric Company began in January, 1931 to guarantee employment to workers in its twelve lamp works. At first, the provision of 50 weeks of not less than 30 hours each was guaranteed those who had two years or more of service. In the second year of its operation, the guaranty was modified to cover 1,250 hours as compared with 1,500 hours under the original guarantee. The employee who accepts is required to deposit 1 percent of his pay in a savings fund. These savings are available to him, with interest, when he leaves the company's employ or retires.

The Rochester Unemployment Benefit Plan is a joint undertaking of perhaps 20 employers of Rochester, N. Y., led by Eastman Kodak Co., Stromberg-Carlson, Bausch and Lomb, and Taylor Instrument Company.

After a years service, an idle employee earning less

than \$50.00 per week would be able to withdraw three-fifths of his average weekly earnings, but not more than \$22.50, for a period running from 6 to 13 weeks, according to length of his previous employment. Through a co-operative undertaking, each company maintains its own reserve. In normal times, the fund is financed by contributions from the employer ranging from one half of 1 percent to 2 percent of his payroll depending upon his previous experience in maintaining stable employment.

Present interest in unemployment insurance comes from the declared intention of President Roosevelt to have Congress enact a nation-wide scheme in cooperation with the states. Senator Wagner of New York and Representative Lewis of Maryland, introduced last session a bill providing for a federal payroll tax of 2 percent. In states where there may be approved unemployment insurance, employers would deduct from their payroll tax all funds paid out under their state law. The standard set in the Wagner-Lewis bill paid a weekly benefit of at least 20 hours earnings for 10 weeks or more. This bill was not passed, but it is almost a certainty that a similar measure will be introduced in the present session.

CONCLUSION

Attitude toward labor is changing daily; what may be considered good procedure today, may be entirely outmoded tomorrow.

No one can definitely say what will satisfy labor, nor what will make for individual efficiency. American labor has today, probably, the highest living standards of any industrial nation; individual and mass efficiency are more highly developed here than anywhere; and the average American worker is better treated by his employer than any of his European brothers, yet the battle in America between industry and labor goes on.

There is little doubt that the maintaining of pleasant relations between the employee and the employer minimizes labor trouble. Industry is responsible for the major portion of their troubles today, for the agitating class was included among those foreign born workers who were brought into this country in order to have low wage scales.

There is no doubt that the development of personnel relations has contributed, by the methods mentioned herein, largely to the efficiency of our methods and the skill of our workers.

The skill and efficiency of European labor cannot be compared with ours because Continental industry has made little or no effort to better the working and domestic conditions of their employees. When the status of all working men are on a similar plane, then and only then, will various industries in this country be able on an individual production scale. As it is, we must make our men more efficient; our machines faster, in order that we may have low mass costs equitable to their low individual costs.

The abolition of high profits and dividends to the stockholder in favor of a more equitable adjustment of wage and living conditions, combined with the abolishing of the living fear of unproductive periods will do much toward settling labor's difficulties. The employee and employer's mutual interests will increase and a friendly, respectful relation can be maintained.

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